

**Response of Central Maine Power Company (CMP) to James Palmer’s November 23, 2018
Review of the New England Clean Energy Connect October 2018 Supplemental Application
Materials**

On November 27, 2018 Jim Beyer circulated to Central Maine Power Company (CMP) and the other parties to the New England Clean Energy Connect (NECEC) proceeding the November 23, 2018 peer review comments of Dr. James F. Palmer (Palmer) regarding CMP’s October 19, 2018 filing of supplemental NECEC application materials. What follows is CMP’s response to Dr. Palmer’s November 23, 2018 comments, following the outline of Dr. Palmer’s comments. **Dr. Palmer’s comments are quoted in bold below.**

2. RAFTING EXPERIENCE SURVEY

Terrence J. DeWan & Associates (TJD&A), which prepared CMP’s visual impact assessment (VIA) and supplemental materials related to the VIA, asked Dr. Brian Robertson, of Market Decision, Inc. (Robertson), to review Dr. Palmer’s November 23, 2018 peer review comments regarding the intercept survey for rafters on the Kennebec River. In general, Dr. Robertson agrees with the comments offered by Dr. Palmer. He found that the statistical tests run by Dr. Palmer were appropriate to determine if there were differences between the control and experimental groups (of which there weren’t many). While Dr. Palmer’s conclusions are generally correct, certain statements discussed below are misleading and warrant discussion. Dr. Robertson’s and TJD&A’s comments follow.

Dr. Robertson offered a number of specific comments, presented section by section.

2.1 Meeting Trip Expectations

“The river rafting experiences of the control and experimental groups we [sic] similar for how most of their expectations were met, which helps support the reasonableness of other comparisons.”

RESPONSE

Robertson: Yes, I agree – there were some differences between the control and experimental groups in their responses to questions other than the visual assessment, but the differences were not significant and would not account for the differences we observed in the ratings of the images, specifically image 5 (with and without the power lines).

2.2 Impact of Signs of Human Activity

“The conclusion is that views of power lines on hillsides create visual impacts that are among the highest of any human activity or development.”

RESPONSE

Robertson: This is worded a bit strongly. Results do show greater impact for the power lines than for clear cuts, wind farms, dams, and bridges, but the impact of transmission lines is equivalent to or less than motorized boats, industrial facilities, residential development along the shore, and parking lots. Some human activities and developments have less impact, some about the same, and some more impact than the power lines. So are they among the “highest?” It would be more accurate to say that “views of power lines create visual impacts higher than some but comparable to other types of human activity or development.”

There are also a wide range of human activities we didn't measure. It would be more accurate to say that views of power lines on hillsides create visual impacts that are among the highest of the human activities or developments assessed in the survey."

2.3 Scenic Quality Ratings

"The research design comparing the control and experimental groups is based on the expectation that there will be no significant difference between the two groups' ratings of the views, except at the Kennebec River crossing. This is the result reported in Table 4, where the only statistically significant difference shows that views of the overhead conductors and warning balls will have a very large and statistically significant visual impact on the view from the Kennebec River at the proposed crossing location ($t = 3.25$, $p = 0.002$, and $g = -0.89$)."

RESPONSE

Robertson: This is correct, but the technical meaning is that there was a statistically significant difference between the experimental and control groups (based on t-tests) in their ratings (with the experimental group having a lower overall rating) and that the difference demonstrates a large effect size (Hedges' g).

2.4 Effect on Enjoyment and Likelihood of Returning

"Another way to consider the effect on enjoyment and likelihood of returning is to compare the ratings for the rafting trip they had just experienced with the ratings of the trip represented by the six photographs. These results tell a different story, as shown in Table 5. Both the control and experimental groups rated the enjoyment of their completed trip to be statistically significantly higher than the trip represented by the six photographs representing that trip. They were also significantly more likely to return to repeat the trip that they had actual [sic] taken than the one represented by the six photographs. These results should not be surprising, since both groups found their trip largely met their expectations for the river to be largely undeveloped, and the "trip" represented by the six photographs were dominated by views of human intrusion—Harris dam, the staging parking lot and a bridge with overhead power line conductors."

RESPONSE

Robertson: This is an important point - there will be a bias created in the results due to the images, and the context of the images can influence metrics compared to the "real" trip.

2.5 Conclusion of the Survey Review

"The application amendment to use horizontal directional drilling (HDD) to cross the Kennebec River will address visual impact concerns at this location. However, the results of the survey may provide some information to assess the visual impacts at other locations, particularly for people engaged in water-based activities. It may not be necessary to see transmission structures or the cleared ROW for the scenic quality to be degraded. In this survey, views of the conductors and warning balls were sufficient to degrade the scenic quality at the Kennebec River crossing."

RESPONSE

TJD&A: As Dr. Robertson notes above, while the results of the Kennebec River survey show greater impact for the power lines than for clear cuts, wind farms, dams, and bridges, the

impact of transmission lines is equivalent to or less than the impact resulting from motorized boats, industrial facilities, residential development along the shore, and parking lots. Accordingly, views of the conductors and warning balls create visual impacts comparable to other types of human activity or development.

2.6 Implications for Visual Impacts at other Locations

“The results of the Kennebec River survey found that people believe that seeing power lines has a greater negative impact on their river recreation experience than most other human activities, including wind turbines, clear cuts, and bridges. This response is comparable to that obtained from intercept surveys to evaluate proposed wind energy development in Maine (Portland Research Group, 2011; Robertson and Mildner, 2012).”

RESPONSE

Robertson: The comments under section 2.2 apply here as well: This is worded a bit too strongly. The results do show greater impact for the power lines than for clear cuts, wind farms, dams, and bridges, but the impact of transmission lines is equivalent to or less than motorized boats, industrial facilities, residential development along the shore, and parking lots. So some human activities and developments have less impact, some about the same, and some more impact than the power lines. It would be more accurate to say that views of power lines create visual impacts higher than some but comparable to other types of human activity or development. And we only can say definitively that the impact of power lines was greater or less than the actual activities we measured in the survey.

“In their response to DEP and LURP’s [sic] September 4 request [for] additional data, CMP offers the Baskahegan Lake User Survey (Kleinschmidt, 2012). This survey was administered to users of Baskahegan Lake, from which the Stetson Mountain Wind Farm is prominently visible. The executive summary of the study states:

Eighty-five percent of respondents were aware of the wind farm prior to visiting the lake and most (81%) said it has no effect or a positive effect on the scenic value of Baskahegan Lake. Almost all respondents (93%) reported that the wind farm has no effect or a positive effect on the overall quality of their recreational experience. In fact, 74% gave the lake the highest scenic rating, and 93% rate the scenic quality of Baskahegan Lake as better than the typical scenic value.

However, this study was not designed to determine how construction of the Stetson Mountain Wind Farm would affect use of the lake. Because it was a post-construction study, it is not possible to know how it affected people who no longer visit Baskahegan Lake. ... It would be misleading to generalize from finding about the effect of seeing wind turbines on the fishing experience of people at Baskahegan Lake in order to explain the effect of seeing a large transmission line while on a Kennebec River rafting trip. There is simply no data to suggest that either study could shed light on the effect to people appreciating the view of a historic site, hiking on a trail, or driving along a road chosen in part for the enjoyment of its scenic quality.”

RESPONSE

TJD&A: The results of the Baskahegan Lake User Survey demonstrate how a highly visible infrastructure project may affect the use and enjoyment of a water body known for its fishing,

boating, and scenic value. While there is no way to compare pre- and post- wind farm use of the lake, there is anecdotal evidence that fishing and boating on Baskahegan Lake has remained constant or has increased slightly since the wind turbines were installed.

Furthermore, the Baskahegan Lake survey was specifically designed to determine how the wind project may affect the future use of the lake.

Recreational users of Baskahegan Lake were surveyed in August of 2012 to learn if the presence of the Stetson Mountain Wind Farm, which is visible from 90% of the lake...influences visitation to and enjoyment of the lake. Results indicate that the Stetson Mountain Wind Farm does neither...These results indicate that the presence of the wind farm does not negatively influence respondents' recreation experiences, nor does it detract negatively from the scenic value of views around Baskahegan Lake.

All respondents are "Likely" to return to Baskahegan lake and 93% are "Very Likely" to visit the lake again in the future (Table 8). Primary reasons for returning were the same reasons as those stated for having a quality experience: a liking of the lake/area and good fishing (Table 9).

Eighty-one percent report the presence of the wind farm as having no effect or a positive effect on the scenic values of Baskahegan Lake (69% no effect, 12% positive effect). Almost all (93%) respondents state the visibility of the wind farm has no effect (89%) or a positive effect (4%) on the quality of their experience. Further, 93% of the respondents stated the wind farm presence does not affect their likelihood to return to Baskahegan Lake.

Significant visibility of a 55-turbine wind farm in the viewshed of Baskahegan Lake, which is valued for its scenery and fishing, does not adversely impact survey respondents. For almost all users, turbine visibility does not adversely impact scenic quality, the quality of the recreational experience, nor the likelihood of their continued recreation in and enjoyment of Baskahegan Lake.¹

The results of this survey, at a minimum, provide insight into the effect that a highly visible infrastructure project may have on future recreational and scenic use of a water body, particularly boating and fishing.

3. VISIBILITY ANALYSIS

3.1 Maine Land Cover Data

"The response states that the 2011 NLCD only "includes 16 land cover types (three of which are only found in Alaska). There are three classifications of forest and 4 classifications of developed areas" and that the MELCD using data from between 1999 and 2004 is superior because it "was further refined to the State of Maine specific classification system (27 land cover classifications)." First the statement is misleading, since the 2011 NLCD has 16 classes plus four that are Alaska specific. The MELCD has 28 values, but the values 0, 1, 14, 17, and 18 are not used....

¹ Baskahegan Lake User Surveys. Kleinschmidt, for First Wind. October 2012.

From this information it is clear that the MELCD based on data from 1999 to 2004 had 23 land classes, 16 that are essentially the same as those from the NLCD and 7 that are “Maine-specific.” The only new “Maine-specific” land cover classes that are assigned heights for use in the visibility analysis are for forest harvest activity. By definition, these activities must have been within 10 years of when the MELCD data were gathered (i.e., the MELCD data were from 2004 or earlier and the harvest activity must have occurred after 1995). None of the harvest activity areas would be classified as such in 2018; there would be new harvest areas which are not indicated in the old MELCD data.”

RESPONSE

TJD&A: The use of MELCD data was adequate as a starting point for assessing potential Project visibility, and was supplemented for portions of the study area (Segments 1 & 2) with topographic viewshed analysis because landcover in a working forest is constantly changing. TJD&A also supplemented the reviewed with Google Earth aerial imagery from 2016 (the most recent aerial imagery available) to determine where recent harvesting operations may alter visibility. Google Earth aerial imagery was used when evaluating the entire study area to cross check the viewshed mapping and verify/validate potential visibility.

3.2 Accuracy of the Landcover Viewshed Map

“Whether one uses the MELCD from 2004 or 2011 NLCD data for the visibility analysis is not the fundamental concern. What really matters is whether the land cover viewshed maps used by TJD&A to evaluate the visibility of NECEC structures from scenic resources and that were submitted as part of the VIA report are accurate.

TJD&A has effectively evaluated the visibility of the proposed NECEC structures from the 39 photosimulation viewpoints. Importantly, they used a CAD-based approach to create the photosimulations and determine the visibility of NECEC structures, which is independent of the GIS-based visibility analysis. TJD&A has provided the location of the photosimulation viewpoints, and it is a simple matter to determine the intersection of these viewpoints with the land cover viewshed map. It is recognized that these viewpoints are not a random sample, rather they have been selected to represent the “worst-case” views. It would seem that if most of them are not within the viewshed, then there is the possibility that other “worst-case” views were overlooked.”

RESPONSE

TJD&A: While the field investigations started with locations where it appeared that there would be views of the Project, experienced TJD&A staff spent considerable time collecting GIS data, identifying scenic resource through on-line research, reviewing aerial imagery, evaluating potential viewpoints, and field checking the viewshed maps. Field investigations included visiting the vast majority of the scenic resources, even those where the landcover viewshed maps did not indicate potential visibility. For most viewpoints, photographs were taken at multiple locations to be verified on the computer to assure that the ‘worst-case’ viewpoint was accurately represented. Dr. Palmer questions the accuracy and methodology of selecting viewpoints, but does not identify any location that should have been included in the inventory of scenic resources. To the contrary, no other “worst-case” views were overlooked.

3.3 Availability of Land Cover Height Data

“As described in the Review of the NECEC VIA (Palmer 2018), higher quality data to describe land cover heights is available. In many places LiDAR data are publicly available. Often it is necessary to process the raw LiDAR data to obtain the height of the land cover, which is called a digital surface model of DSM. Alternately, a DSM is commercially available from Intermap Technologies. TJD&A (2015) has experience using Intermap Technologies DSM data to evaluate the visibility of transmission structures.”

RESPONSE

TJD&A: As we noted in our October 19, 2018 MDEP/LUPC Response, LIDAR data for the Project area was not readily available when the viewshed mapping was prepared, but the data used were appropriate and adequate for the visual analysis. The completed LIDAR metadata record for landcover in the northern portions of the study area was created in November 2017. While LIDAR data may have been incrementally available for some segments of the study area throughout 2017, we chose to use the MELCD because it was available for the entire study area and therefore provided consistency in our analysis. In defining methodologies for completing Visual Impact Assessments, Chapter 315 cites the need to use ‘Standard professional practice’ techniques. There is no specific requirement to use LIDAR data. Using MELCD is an accepted standard professional practice for preparing VIAs in Maine.

3.4 Field Verification of Visibility

“THD&A (sic) used field sheets to document photo locations, but they do not appear to systematically record whether there is potential visibility, and how that was determined. In addition, there is no indication that potential visibility is evaluated at all sites that meet Chapter 315.10’s criteria for being a scenic resource. The value of field verification is further complicated because it is first limited by the land cover viewshed, which did not correctly identify visibility of NECEC structures at many viewpoints.”

RESPONSE

TJD&A: TJD&A began the process by determining where all of the potential scenic resources within three to five miles would be located in relationship to the Project using available MEOGIS data bases for conservation lands, waterbodies, roads, and historic resources. Other data sources TJD&A used to identify visibility of NECEC structures include United States Geological Survey (“USGS”) maps; substation grading plans; 3D PLS CADD models, cross-sections and elevations provided by POWER Engineers; maps and documentation from the comprehensive plans from individual towns; information from the Land for Maine’s Future website; Maine Department of Agriculture, Conservation and Forestry (“MDACF”) websites for State Parks, Wildlife Refuges; Maine Department of Inland Fisheries & Wildlife (“MDIFW”) Lake Survey Maps; Interconnected Trail Systems (“ITS”); Maine Land Use Planning Commission zoning maps; the National Park Services’ National Natural Landmark website; The Nature Conservancy project maps; The Trust for Public Land; The Forest Society of Maine; local/regional land trusts; sites listed on the National or State Register of Historic Places; Maine Lakes Study; Maine Wildlands Lake Assessment; Maine Rivers Study; DeLorme Atlas and Gazetteer; Google Earth, Maine Trail Finder; and other secondary data sources.

Potential Project visibility was first determined by reviewing both the topographic and landcover viewshed analyses. Planning for field investigations included a pre-check of potential visibility from identified scenic resources using office resources, online research (e.g., resource websites,

photos posted in social media, trail descriptions), knowledge of the area, and Google Earth aerial imagery. Once we had a greater understanding of potential visibility from scenic resources, we completed field investigations for the identified areas. We documented views from several locations on or within a resource to ensure we had a 'worst-case' viewpoint to illustrate the highest degree of potential Project visibility. Computer model overlays were used in the field as reference guides to select locations for photography from key locations. In some locations, Project visibility or lack of visibility (typically due to intervening vegetation)) could be determined in the field and was noted in the field sheets. When visibility could not be determined in the field, detailed 3D model overlays were completed to determine Project visibility and to select photographs to use for photosimulations and the study area photo appendix.

3.5 Visibility Conclusions

“However, the real issue is whether the visibility analysis is accurate. A simple evaluation compares how the visibility in the CAD-based photosimulations compares with the GIS-based land cover viewshed for those viewpoints. It indicates that half of the photosimulations with visibility of NECEC structures are outside the GIS-based landcover viewshed. This is a problem because the GIS viewshed is the primary tool to identify scenic resources with potential visibility. It is assumed that these specific viewpoints were identified opportunistically during fieldwork. How many “worst-case” viewpoints were left unidentified because they were outside the landcover viewshed?”

It is believed that more accurate alternatives exist to using MELCD for representing DSM data to conduct a visibility analysis. The question remains, why does the VIA not use the most accurate available land cover height information?”

RESPONSE

TJD&A: The VIA uses land height information that is accurate and established using accepted standard professional practice for preparing VIAs in Maine. Viewshed mapping is one step in the process of selecting viewpoints, understanding where the Project may be seen, and creating photosimulations to illustrate the change in the landscape. The viewshed map indicates where at least the top of at least one transmission structure within 5 miles may be visible. This is the theoretical area of visibility. In other words, if the top of a structure were to have an infinitely bright light, this is the area that would be illuminated. However, from a practical viewpoint, a single point (i.e., the top inch of a transmission structure) will not be readily apparent to the typical observer, especially at distances beyond the foreground (i.e., 0.5 miles).

As noted in the VIA, trees have been assigned a height of 40', which is standard practice for vegetative cover mapping for VIAs in Maine. In many areas (e.g., along shorefronts and stream corridors), this is significantly lower than the actual tree heights, which will lead to an overestimation of structure visibility. As noted on the maps, “potential transmission line visibility needs to be confirmed with field investigations and other visualization techniques.”

While the field investigations started with locations where it appeared that there would be views of the Project, our experienced staff spent considerable time collecting GIS data, identifying scenic resource through on-line research, reviewing aerial imagery, evaluating potential viewpoints, and field checking the viewshed maps. Field investigations included visiting the vast majority of the scenic resources, even those where the landcover viewshed

maps did not indicate potential visibility. For most viewpoints, photographs were taken at multiple locations to be verified on the computer to assure that the 'worst-case' viewpoint was accurately represented. While Dr. Palmer questions the accuracy and methodology of selecting viewpoints, he does not identify any location that should have been included in the inventory of scenic resources.

4. SCENIC RESOURCES

"The September 4, 2018 request for data from DEP and LUPC stated that:

CMP needs to provide a complete inventory of scenic resources potentially impacted by the project, including but not limited to, historic sites, streams and public roads.

CMP's response was:

The format and methodology for the NECEC VIA is virtually identical to the format and methodology used in the approved and now constructed MPRP, with the exception that viewshed mapping was used for the NECEC inventory."

This may be the case, but it is not an adequate response. The MPRP VIA was not subject to peer review, and now that the NECEC is being peer reviewed there are questions about why the identification of scenic resources does not follow the plain language interpretation of Chapter 315.10 as described in Palmer's (2018) review of the NECEC VIA.

The Review of the NECEC VIA mentions many potential scenic resources that were not fully considered, among them:

- **Public roads visited in part for the enjoyment of visual qualities.**
- **Properties within the study area that are eligible for inclusion in the National Register of Historic Places.**
- **Properties that take advantage of Maine's Open Space Tax Law offers property tax reductions in return for public access to private conservation lands; lands that would be visited in part for the enjoyment of visual qualities."**

RESPONSE

TJD&A: To clarify what is considered a scenic resource, TJD&A and CMP had a conference call with Jim Beyer and Jim Palmer on Wednesday, November 28, 2018. Mr. Beyer provided the following guidance on the NRPA definition of a scenic resource:

- Not all roads are considered scenic resources. However, public roads that have notable scenic vistas should be identified and included.
- Not all cemeteries are scenic resources. Only those that are considered public properties should be included.
- By definition, scenic resources are "Public natural resources or public lands visited by the general public, in part for the use, observation, enjoyment, and appreciation of natural or cultural visual qualities" (emphasis added). Therefore, private properties (such as private homes, lands held by non-profits, or institutional lands) are not considered scenic resources. Lands that are registered with the Open Space Tax Law are not scenic resources for the purposes of Ch. 315.

Public Roads

TJD&A evaluated the 194 roads that will be crossed by the Project to determine those that may be visited by the general public in part for their scenic qualities or possess significant natural or cultural scenic character, and therefore should be considered scenic resources. Of these, 79 roads are private and not considered scenic resources. Of the 115 public roads evaluated, TJD&A determined that 11 have national/statewide, regional, or local significance for scenic qualities and/or natural/cultural scenic character.

The significant **national/statewide** road is Route 201, the **Old Canada Road National Scenic Byway**. The Project will cross Route 201 in Johnson Mountain Twp and Moscow and will be visible from a 1,000' section in Parlin Pond Twp. The VIA submitted in September 17, 2017 included Photosimulations 9 and 19. A supplemental submission in September and October, 2018 included a leaf-off/snow cover Photosimulation (#43) from Route 201 in Parlin Pond Twp. See narrative for Leaf-Off/Snow Cover visual impacts.

Regional roads are typically primary travel routes between service centers and are commonly used by commuting motorists. TJD&A identified three regionally important routes within the Project area that possess significant scenic qualities and/or cultural character: Route 43/Starks Road in Madison and Starks, Route 2/Farmington Falls Road in Farmington, and Route 136/Riverside Drive in Auburn and Durham. In each location, the Project would be seen in context with existing transmission lines.

1. Route 43/ Starks Road connects Madison and Starks. The Project will cross the road in an area of rolling hills and expansive agricultural areas that extends for approximately one mile. A substation is located 850' west of the road within the corridor. The closest existing structure is 50' to the southwest and 60' to the northeast of the road. The proposed structures will be set back significantly farther from the road; 425' to the southwest and 325ft to the northeast. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 80-90'. The visual impact will be minor due to the contrast in scale, color, and form, but moderated by the increased setback from the road. The proposed structures will not block views of the open fields or farmsteads. Motorists who currently travel the road encounter views of the open fields and cross under the existing transmission line. Motorists will continue to drive Starks Road with the proposed Project in place. Photo P6-9 in Map 6/Page 3, Appendix B Study Area Photographs.

2. Route 2/Farmington Falls Road in Farmington is located along the east side of the Sandy River valley. Motorists have periodic views of the river, agricultural fields and farmhouses. The Project will cross Farmington Falls Road adjacent to the existing 115kV transmission line south of Farmington. The existing corridor provides a quick glimpse southwest towards cornfields along the Sandy River. There is a substation 735' from this crossing on the northeast side of the road. The closest existing structure is 100' to the southwest and 190' to the northeast. The proposed structures will be set back farther from the road; 575' to the southwest and 385' to the northeast. The existing H-frame structures are approximately 50' in height; the proposed structures will range from 85-105'. The existing 225' wide cleared corridor will be widened by 75' on the western side to accommodate the proposed HVDC transmission line. The widened corridor will allow for increased views toward the Sandy

River. The Project will have a moderate visual impact on Route 2 due to the increased number of visible structures. The impact will be confined to a limited area due to roadside vegetation that will limit the duration of views. Farmington has not designated any road as scenic in its Comprehensive Plan. A visual assessment has been provided in previous submissions. See Photosimulation 22 in Appendix D.

3. Riverside Drive runs along the southwestern edge of the Androscoggin River between Lewiston-Auburn and Durham. The Comprehensive Plan for the City of Auburn recognizes Route 136/Riverside Drive as an important southern gateway into the City. The road provides views of the river and rural agricultural landscapes south of the city. The Project crossing is located in an area with open views of the river from the north to the northeast and is surrounded by scattered farmhouses and single-family homes. As part of the Project, two structures on the eastern side of the river will be replaced with weathered steel structures that will be as visible as the existing structures from Riverside Drive. The closest existing structures are 100' to the northeast and 360' to the southwest. The proposed structures will be set back farther from the road; 575' to the southwest and 385' to the northeast. The existing H-frame structures are approximately 95' in height; the proposed structures will be 75' range. The existing cleared corridor will remain the same. While the Project will have a moderate visual impact to Riverside Drive, the expansive river views will remain, and people who travel the road to enjoy views of the river and open field will continue to do so. A visual assessment has been provided in previous submissions. See Photosimulation 25 in Appendix D. See P9-10 and P9-11 Map 9/Page 5 in Appendix B Study Area Photographs.

Local roads are primarily used by people living in the immediate community and are not commonly traveled by commuters. We have identified seven locally significant roads within the Project area that possess scenic qualities or cultural character greater than the common landscape. In most cases, these are characterized by distant views over open agricultural fields. In all cases, the Project would be visible in the context of existing transmission lines.

1. Madison Street in Anson is a narrow paved/gravel road that is located along the northwest side of the Carrabassett River near the mouth of the Kennebec River. The road passes through woods and farm fields and provides access to a public boat launch on the river opposite Savage Island. The Project will cross Madison Street adjacent to the existing 115 kV transmission line. Within the corridor, there are southern views towards the river over a farm field. There are no significant views looking the north. The closest existing structure is 225' to the south and 50' north of the road. The proposed structures will be 125' to the south and 875' to the north. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 95 to 105'. The visual impact will be minor due to the limited duration of exposure and contrast in structure scale, color, form and material. The proposed structures will not interfere or block views across the field. Motorists who currently travel the road to enjoy views of the woods and farmsteads and to access the river will continue to enjoy Madison Street with the proposed Project in place.

2. Perham Hill Road in Farmington passes through rolling wooded hills and open agricultural fields and farmsteads. There are opportunities for views of distant hills from numerous locations along the road. The Project will cross the road adjacent to the existing 115kV transmission line near a bend in the road. The closest existing structure is 80' to the southwest and 275' to the

northeast of the road. The proposed structures will be 845' to the southwest and 170' to the northeast. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 80-90'. Due to the roadside vegetation and alignment of the road, the additional visual impact will be minor. The contrast in structure scale, color, and form will be noticeable, but the proposed structures will not interfere with or block distant and foreground views across fields. Motorists who currently travel the road to enjoy views of the open fields and farmsteads will continue to enjoy Perham Hill Road with the proposed Project in place. See P7-1, Map7/Page 1 Appendix B Study Area Photographs.

3. There are long distance views from the south to west from **Osborne Road** in Farmington. The Project crossing is on a ridge in an open area approximately 0.6 miles long with views of agricultural fields and a few single-family homes. The closest existing structure is 240' to the southwest and 65' to the northeast. The proposed structures will be 150' to the southwest and 890' to the northeast. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 85-90'. The proposed structures will be silhouetted against the sky to a greater degree than the existing structures but the views to the distant rolling hills will not be blocked. The visual impact will be minor as a result of the contrast in structure scale, color, and form. Local motorists who currently enjoy the distant views of the open fields and farmsteads will continue to enjoy Osborne Road with the proposed Project in place.

4. The proposed Project will cross **Knowlton Corner Road** in Farmington at the edge of a large open field adjacent to the existing 115 kV transmission line. The closest existing structure looking south is 125' from the road and 180' from the north side. Distant views from the road towards the rolling wooded hills toward the northeast will not be affected by the Project. The proposed structures will be slightly more noticeable traveling southwest. Since the proposed structure will be 865' south of the road, it will be located at a lower elevation and will not be silhouetted against the sky. The closest proposed structure looking north will be 180' from the road and less visible due to roadside vegetation. The existing structures are approximately 50' in height; the proposed structures are in the 75-80' range. There will be minimal additional visual impact from Knowlton Corner Road. Motorists will continue to enjoy the views of the distant hills.

5. McCrillis Corner Road in Wilton passes through a wooded landscape with occasional views of agricultural fields and farmsteads. There are long distance views from east to south over the fields near the Project crossing. The closest existing structure is 75' to the northeast and 285' to the southwest of the paved road. The proposed structures will be set back farther from the road at 615' to the northeast and 310' to the southwest. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 90-95'. From areas south of the crossing the proposed structures will be silhouetted against the sky approached the transmission line, however, roadside vegetation will partially screen the structures. The views to the south open up after a southbound motorist crosses under the transmission line. Views traveling north are generally screened by roadside vegetation. The additional visual impact will be minor as a result the contrast in structure scale, color, and form. Local motorists who currently travel the road to enjoy the distant views of the open fields and farmsteads will continue to enjoy McCrillis Corner Road with the proposed Project in place.

6. The Project will cross **Soules Hill Road** in Jay in a mostly wooded area adjacent to fields, farmhouses, and single-family homes. Where the existing transmission line crosses the road, the break in the vegetation allows for a distant view to the north for motorists traveling northwest. The 75' of additional clearing will increase the opening and extend the view farther to the northwest. The closest existing structure is 185' to the north and 100' to the south of the paved road. The proposed structures will be set back farther from the road at 550' to the north and 120' to the south. The existing H-frame structures are approximately 50' in height; the proposed structures will range in height from 90-95'. The additional visual impact will be minor due to the short duration of exposure and the increased structure setback on the north side. Local motorists who currently travel the road to enjoy the brief distant view will continue to enjoy Soules Hill Road with the proposed Project in place. See P7-14/Map7/Page 4 in Appendix B Study Area Photographs.

7. The most scenic portion of **Church Hill Road** in Leeds passes through a one-mile long section of open agricultural fields with farmsteads. These large fields on the north side of the road allow for distant views to the northwest primarily when driving west. There are no significant views to the south. The existing transmission line crosses active farmland near the crest of Church Hill. The closest existing structure is 200' to the north and 90' to the south of the paved road. The proposed structures will be set back farther from the road at 375' to the north and 490' to the south. The Project will be most visible when driving east through the open fields in the opposite direction of the distant northern views. When driving west (towards the view) a motorist currently sees six existing transmission line structures in the open field. The Project will add one new structure to the field (375' from road) and one farther away (1,400') along the back edge of the field. The existing H-frame structures are approximately 50' in height; the existing monopoles are approximately 75' in height. The proposed structures will range in height from 85-90'. The additional visual impact will be minor due to the increased structure setback on the north side. Local motorists who currently travel the road to enjoy the brief distant view will continue to enjoy Church Hill Road with the proposed Project in place. See P8-16 Map 8/Page7 in Appendix B Study Area Photographs.

Rivers and Streams

The inventory of rivers and streams within three miles of the NECEC transmission corridor includes rivers and streams that are noted for their scenic value in the Maine Rivers Study (Moxie Stream, Upper Kennebec River, Sheepscot River); rivers and streams that are noted for values other than scenic (Carrabassett River, Androscoggin River, West Branch of the Sheepscot River) and rivers and streams that are not rated (Sandy River, Dead River). Visual impact assessments have been prepared for these rivers and streams.

Outside of these major rivers and streams there are hundreds of other streams and brooks that are crossed by, adjacent to, or are within 3 miles of the NECEC. Many of them in Segment 1 (new HVDC section) are relatively minor streams with limited recreational value on private timberland that may not qualify as scenic resources. All streams and rivers in Segment 1 will maintain a 100' riparian buffer that will minimize views of the Project for recreational boaters and people fishing in the streams and rivers.

Impacts to outstanding river segments have been further minimized by crossing in locations where a CMP right-of-way already exists or through design modifications and/or increased

riparian buffers. As discussed in detail in the compensation plan, to offset impact to existing recreational uses of outstanding river segments, CMP is including land preservation of three tracts along the Dead River, which collectively will add 1,054 acres to Maine's conserved lands and provide protection in perpetuity of 8.1 miles of river frontage along the Dead River.

There are a number of significant streams and rivers in Segment 1 that were analyzed in the VIA: Upper Kennebec River, Moxie Stream, Moose River, South Branch Moose River, Baker Stream, and Austin Stream.

1. Streams / Rivers crossed by NECEC. There will be two types of visual affects to stream and river crossings in the new HVDC section (Segment 1).

- At the stream crossing, where an observer (a person boating or floating on the stream/river or fishing along or in the river/stream) will be able to see the overhead conductors, the cleared transmission corridor, and the 100' tall transmission structures. Visual impact will be moderate to strong in these situations. CMP has taken and proposed several mitigation measures to avoid or offset visual impacts on scenic resources: selecting a route that avoided or minimized visibility on great ponds and rivers, especially those that have been rated for their scenic character; preservation of a 100 foot riparian buffer throughout the crossing; setting transmission structures back from the edge of the stream channel to minimize visibility; using weathering steel structures to minimize contrasts in color with the surrounding vegetation. The amount, type, and height of vegetation within the riparian buffer will vary at each individual stream/river crossing. With the additional sunlight resulting from the transmission line clearing, the riparian vegetation is expected to increase in size and density, thus affording a more effective visual buffer.
- Approaching the stream/river crossing, where an observer will see the overhead conductors. The extent of the impact will be a function of the channel alignment (i.e., on relatively straight streams/rivers the conductors might be visible for upwards of 0.5 mile; on meandering streams, the view of the conductors will be limited) and observable distance. As a mitigation measure, CMP will be using non-specular conductors at the Moxie Stream aerial crossing to minimize color contrast.

CMP has developed a planting plan for Moxie Stream to reinforce the riparian zone and to promote non-capable native shrubs species. In order to avoid visual impacts to the Kennebec River, CMP will be using Horizontal Directional Drilling (HDD) to install the line under the river, thus avoiding any significant visual impacts to the river and its recreational users.

2. Streams / Rivers not crossed but within 0.25 mile (where NECEC might be visible). In these situations, the transmission corridor will be screened by existing woodland vegetation. To someone on the stream/river or fishing along the shoreline, there may be occasional filtered views of the structures, but the corridor will not be a dominant presence in the landscape. The degree of visibility will be a function of past and future timber harvesting practices, density of riparian vegetation, and season of the year. Effects may be more noticeable in leaf-off conditions. Visual impact will be slight to none in these situations.

3. Streams / Rivers beyond 0.25 mile. In general, where the NECEC corridor is located more than a quarter of a mile from streams and rivers, there will be no visual effect due to the intervening vegetation in the surrounding woodlands.

Co-Located Sections (Segments 2– 5)

There are a number of significant streams and rivers in the co-located sections that were analyzed in the VIA: Carrabassett River, NoName Stream, Stetson Stream, Libby Stream, Runaround Stream, West Branch of the Sheepscot River, Montsweag Brook, Back River, and Sheepscot River.

4. Streams / Rivers crossed by NECEC. There will be two types of visual effects to stream and river crossings in the co-located sections.

- At the stream crossing, where an observer (a person boating or floating on the stream/river or fishing along or in the river/stream) will be able to see the overhead conductors, the 75' of additional transmission corridor clearing, and the 100'± tall transmission structures. Visual impact will be moderate to strong in these situations, due to the increased corridor width; difference in color, form, and texture of the NECEC structures; and the increase in the number of visible structures. CMP has taken and proposed several mitigation measures to offset visual impacts on these resources: co-locating the Project within an existing transmission corridor; retaining a 100' natural riparian buffer within 100 feet of all outstanding river segments, plus all rivers, streams, or brooks containing Threatened or Endangered species; setting transmission structures back from the top of the stream bank to minimize visibility; and using weathering steel structures to minimize contrasts in color with the surrounding vegetation. The amount, type, and height of vegetation within the riparian buffer will vary with each individual stream/river crossing. With the additional sunlight resulting from the transmission line clearing, the riparian vegetation is expected to increase in size and density, thus affording a more effective visual buffer.
- Approaching the stream/river crossing, where an observer will see the overhead conductors. The extent of the impact will be a function of the channel alignment (i.e., on relatively straight streams/rivers the conductors might be visible for upwards of 0.5 mile; on meandering streams, the view of the conductors will be limited) and observable distance.

5. Streams / Rivers not crossed but within 0.25 mile (where NECEC might be visible). In these situations, the transmission corridor may be screened by riparian vegetation of various sizes and densities. To someone on the stream/river or fishing along the shoreline, there may be occasional filtered views of the structures, but the corridor will not be a dominant presence in the landscape. The degree of visibility will be a function of past and future timber harvesting practices, surrounding land uses, the type of riparian vegetation present, and the season of the year. Effects may be more noticeable in leaf-off conditions. Visual impact will be slight to moderate in these situations.

6. Streams / Rivers beyond 0.25 mile. In general, where the NECEC corridor is located more than a quarter of a mile from streams and rivers, there will be no visual effect due to riparian vegetation that will block or filter views of the transmission structures. At this distance, even if

structures were visible, they would be perceived as relatively small objects in the landscape and would not have a significant visual affect.

“For instance, there are several locations where clusters of properties eligible for inclusion in the National Register of Historic Places appear to have a potential for visual impacts.”

RESPONSE

TJD&A: TJD&A relied on research on historic properties compiled by SEARCH to identify public sites or structures on or eligible for listing on the NRHP. In their reconnaissance survey work, SEARCH identified 1,488 above ground historic resources within the 0.5-mile Area of Potential Effect (APE). Of these, 103 had already been determined eligible. Of these, SEARCH considered 8 to be publicly accessible. However, two of these – the Riverside Inn in Bingham and the Jackson Pine Cone Cabins in Lewiston – are private properties that are open to the public, and are not included in the list of eligible resources. Two additional properties on SEARCH’s list – Treat Cemetery and Pleasant Hill Cemetery – are privately owned. Table 1 below identifies four resources that are considered ‘public lands visited by the general public’ that are eligible for listing on the National Register. The table describes the potential visual affect the Project may have on each.

The potentially eligible resources include the Bingham Union Library in the Bingham Village Historic District, 0.5 miles from the Project; the Rumford Branch of Maine Central Railroad (an active rail line) that is crossed by the Project; one cemetery; and an 1850 schoolhouse. With the exception of the Maine Central Railroad rail line, none of these resources will have direct views of the Project.

Table 1: Scenic Resources: Properties Eligible for Listing on the NRHP

Name	Town	Address	Distance	Visual Affect
Bingham Union Library	Bingham	297 Main Street	0.55 miles	Any views would be obstructed by village homes between the library and the Project.
Valley Cemetery /Old Valley Cemetery	Greene	.10 mile north of 343 Route 202	0.32 miles	Tips of structures may be visible above dense trees between the Cemetery and the Project.
Maine Central Railroad—Rumford Branch at East Livermore	Livermore Falls	River Road just west of Route 133	Crossing	Resource is an active rail line in a 400' transmission corridor with an existing 115 kV transmission line and gravel road.
Garfield School	Concord Twp	Kennebec River Road/ RT 16. 660' N of Jackson Pond	0.26 miles	Tips of structures may be visible above dense trees between the school building and the Project.

“Cemeteries are an example of sites that might qualify as scenic resources. The October 2018 response includes Attachment I: Cemetery Visibility Review, which contains maps and photographs for eight cemeteries but lacks any descriptive text. There are 222 cemeteries within 3 miles of the NECEC centerline. Of these 47 appear to be in the landcover viewshed for segments 1-4. Were all of these cemeteries visited, and if so where is the documentation evaluating their visibility and the potential visual impact?”

RESPONSE

TJD&A: There are a total of 158 cemeteries listed in the Scenic Resource spreadsheet provided by Dr. Palmer within 3 miles of the Project. Of these, approximately 100 are publicly owned; 52 are private cemeteries; and ownership of the remaining 6± is unknown. TJD&A evaluated all of the cemeteries within three miles of the Project using computer models and field analysis in a few of these locations. Based on viewshed analysis and field investigations, eight cemeteries may have potential Project views. Of these, three are public and may be considered scenic resources. A listing of these cemeteries, along with computer analyses, was submitted as Attachment I in the October 19, 2018 MDEP/LUPC Response. The following is a summary of that analysis and assessment of potential visual impact.

Village Cemetery, Bingham. During leaf off conditions there may be views of the Project from within the cemetery; however, views will be screened by mature hardwood trees lining the Kennebec River. The partially visible HVDC structures will have a negligible visual impact on users of the cemetery and will not affect the continued use and enjoyment of the cemetery.

Athearn Cemetery, Anson. The existing corridor is visible from Route 43 in front of the cemetery over agricultural fields and farm buildings to the south. Two or three NECEC structures will be visible from within the cemetery and will be seen in context with a large farming operation. The presence of these additional structures at a distance of 1,000' will have a minor impact on the cemetery and will not affect its continued use and enjoyment.

Bradbury Cemetery, Durham. Several of the wooden H-frame structures in the existing transmission corridors are currently visible from the cemetery, over a property containing an existing house, three car garage, and assorted vehicles. One or two of the proposed structures may be visible in gaps in the vegetation. The additional structures will have a minimal visual impact on the cemetery and will not affect its continued use and enjoyment.

Our initial assessment also included an inventory of five privately owned cemeteries: Garcelon Cemetery in Lewiston; Union Cemetery in Auburn; and Pleasant Hill Cemetery, Holy Cross Cemetery, and Stricklands Cemetery in Livermore Falls.

“Attachment K: Conservation Area Charts indicate that the BPL owned West Forks Parcel and Johnson Mountain Parcel are not scenic resources because they are managed primarily for timber and not visual resources. However, it is not necessary for the primary objectives to include visual resource management—it is whether the general public visits them in part for enjoyment of their visual qualities. Documentation must be provided showing that these BPL lands are not visited in part for enjoyment of their visual qualities. How many other public resources or public lands have been eliminated from consideration because they were “not managed for preservation of Visual Resources”?”

RESPONSE

TJD&A: On May 31, 2018 (after the submission of the Project VIA), the Department of Agriculture, Conservation and Forestry, Bureau of Parks and Lands, issues a Draft of the Upper Kennebec Region Management Plan. This document provides an overview of current conditions and uses on the network of Maine Public Reserve Lands that are found in the Upper Kennebec Region.

The Johnson Mountain Parcel and West Forks Northeast Parcel are described in the section on 'Smaller Public Lots', which make up approximately 20% of the public lands in the region. These lots are managed primarily for timber production. With the exception of locations where the AT crosses two of the lots, there are no other recreation facilities on these properties. All are visited to some degree by deer, moose, and/or bear hunters, depending on the quality of habitat.

Johnson Mountain and West Forks Northeast Lots

The following description of these two adjacent public lots is taken from the Management Plan:

These adjacent original reservation lots are located on either side of the town line, covering 514 and 730 acres, respectively. The lots abut the newly acquired Cold Stream Forest parcels on the west side and are likewise accessible from Capital Road and Wilson Hill Road. The two ponds almost wholly within the lots, 21-acre Wilson Hill Pond (West Forks Lot) and 13-acre Little Wilson Hill Pond (Johnson Mtn. Lot) are tributary to Cold Stream. IF&W classifies only Little Wilson as a brook trout fishery. A few boats (five were observed on a site visit) are stored at Little Wilson Pond where an informal access trail comes to the south shore. There are four bear bait sites on the lot.

The terrain is quite varied, with low hills, bogs, streams, and the two ponds, and a varied mix of timber types. There is a small amount of wetland on the lot, primarily associated with the ponds. There are no special status or unique wildlife known to be present.

A 100-foot wide CMP transmission line right-of-way (established in 1963) (the Jackman Tieline) follows the town line across the West Forks Plt. Lot. A new 300-foot wide by mile-long transmission line lease crossing both lots from north to south was executed with CMP in December 2014; the line has not yet been built.

Timber Resources and Harvest History. *Of the 1,241 acres on the two lots, 1,156 acres are regulated forest, the remainder being mostly open bog or roads, plus 36 acres in the utility corridor across the West Forks lot. The regulated forest is 24% softwood types, 40% mixed wood, and 36% hardwood, with an average stocking of about 26 cords per acre.*

The Bureau has conducted two timber harvests on these combined tracts. The first, in 1986-87, produced 9,900 cords, with removal of fir and low quality hardwoods the main objective, along with improvement harvests. The second entry came twenty years after the first, in 2006-07, with about 4,200 cords harvested as about half the forest was not in need of treatment at that time.

Timber Management is the dominant allocation for most of the Johnson Mountain and West Forks Lots, excepting the riparian buffer associated with the stream on ponds on the lots,

which are allocated to Wildlife Management, and the management roads providing vehicle access into the lots, which are allocated to Developed Recreation Class 1. Remote Recreation is a secondary use on the entire lots; Wildlife Management is a secondary use on the timber management acres.

There is no mention of any scenic resources associated with these parcels, nor is there any reference to recreation activities other than hunting. It is clear from the description in the Management Plan that the primary use of these properties is for timber production.

Other Public Lands

The following additional public lands were assessed as part of the evaluation of scenic resources within the Study Area (Text from the Upper Kennebec Management Plan *in italics*). The Management Plan notes:

“These lands are managed primarily as timber lots, with the exception of the Upper Enchanted Township Lot, where access and elevation are limiting factors. Sections of the AT cross two of the lots; with few exceptions, there are no other recreation facilities on these properties. All are visited to some degree by deer, moose and/or bear hunters, depending on the quality of habitat; several have designated bear bait sites.

Upper Enchanted (Coburn Mountain Lot)

This 320-acre original public lot, draped across much of 3,700-foot Coburn Mountain (the highest in the region), is located about three miles west of US 201. The parcel is commonly referred to as the Coburn Mountain Lot. Enchanted Mountain Road extends from Rt. 201 to the eastern foot of the mountain, within about two-thirds mile of the lot; the Bureau has a right-of-way easement on the road from Somerset County, with responsibility for maintenance and repair. The east side of the mountain, adjacent to the public lot, is the former site of the Enchanted Mountain ski resort, which operated from 1966 to 1974.

The peak is the former site of a fire lookout tower. A radio communications facility with a metal building and solar panels is at the top of the mountain at the former fire tower site. This site is leased by the Bureau to the Maine Office of Information Technology (OIT) and U.S. Customs and Border Protection in the Department of Homeland Security, and is managed by OIT through an Interagency Agreement. A second smaller communication facility on a site leased to Carrier, Inc. is at the top of the old ski lift area, near the east boundary of the parcel. A new 25-year lease was executed in 2013.

Recreation Resources. *Foot access to the peak is via an old road and snowmobile route, with a small parking area at the base of the former ski area. A steep quarter-mile informal foot trail also leads to the peak, branching off the road soon after it enters the public lot. An observation platform on a 20-foot steel tower where the fire tower once stood provides excellent 360-degree views of the entire region. Plans are underway to reconfigure the communications facilities and relocate the tower. Development of an interpretive panel for the viewing tower is in progress.*

The snowmobile trail follows the old road onto the lot and then winds up to the tower site. It is the highest groomed trail in the state and an important destination for local riders and visitors. It is connected to ITS 86 and 89 and the regional trail network. The Old Canada Road

Byway committee is interested in development of an improved hiking trail to the tower site. The existing informal foot trail to the summit is poorly sited and too steep to be sustainable.

The VIA describes the potential visual impact on PP 6-25 and 6-26. Photosimulations are provided for both leaf-on and leaf-off conditions from Coburn Mountain.

Moxie Gore and The Forks PLT N

The 450-acre Moxie Gore Lot and the 724-acre The Forks Plt. North Lot (abutting the Moxie Gore Lot on the south) are original public reservations just outside The Forks. Access to the lots is from Lake Moxie Road, a paved town road that crosses both parcels. The only management roads, on The Forks Lot, were blocked after the last harvest, thus there is no public vehicular access to the interior of the lots.

The Moxie Falls state park property, site of the tallest waterfall in the state, is adjacent to the Moxie Gore Lot on the north. The Parks-managed parking area and the first one-third mile of the hiking trail to the falls is on the Moxie Gore Lot. A snowmobile and ATV trail crosses The Forks lot on a management road, linking the primary route to the south of the lot to Lake Moxie Road. There are no other recreation facilities. The lots comprise the visual backdrop for travelers on the Lake Moxie Road. About 100 feet of Bureau land on each side of Lake Moxie Road on both lots is unregulated due to visual concern, as is about 25 acres on the west edge of The Forks North Lot, where the land drops sharply toward the Kennebec.

There is no Project visibility from Moxie Gore or The Forks PLT N. There will be no Project views from Moxie Falls as described in the VIA on p 6-23.

Bradstreet

This is a 180-acre original public lot, about two-thirds a mile by half mile in dimension. The lot lies about nine miles west of Rt. 201 along Spencer Road (a privately maintained haul route), which crosses the lot from east to west. Much of the north portion of the lot is occupied by 47-acre Moore Pond, which is rated “significant” for fishery resources in the Wildland Lakes Assessment, and a smaller pond downstream. Special fishing regulations apply on Moore Pond (artificial lures only, and catch and release). A few boats are stored on the south shoreline at the end of an old jeep road.

Moore Pond is described in the VIA on p 6-25 (no visibility due to intervening vegetation.)

Caratunk East

The 558-acre Caratunk South Lot and the 544-acre Caratunk East Lot are original public reservations about five miles apart, one on the south and the other on the east town line. The East Lot is more remote, accessed via several miles of abutters roads connecting to Route 16 to the south. The management roads on the lots were blocked after the last harvest, thus there is no public vehicular access to the interior of the lots.”

There is no Project visibility from Caratunk E. The Caratunk South Lot is beyond three miles from the Project and will have no Project visibility.

In short, The Moxie Gore, Forks PLT N, and Caratunk East lots (Original Reservation Public Lots *managed primarily as timber lots*) were not included in our original assessment. As noted above, there will be no Project visibility from these lots.

“The question remains—why is there not a full accounting of potential scenic resources and a documented evaluation of all those with potential visibility? There does not even appear to be a process to attempt a full accounting.”

RESPONSE

See Attachment F: Scenic Resource Chart which documents potential scenic resources and summarizes the evaluation process used to determine visibility and potential visual impact. As described in the Section 3.4 Response, the process included collection and evaluation of all relevant GIS data, viewshed analysis, aerial imagery review, online research, field investigations with photographic documentation, 3D model analysis, and photosimulations.

5. PHOTOSIMULATIONS

5.1 Process for Selecting Photosimulation Viewpoints

“There needs to be a process for determining the selection of viewpoints that are representative of more general conditions.

Attachment Q: VIA PSIM Summary describes several characteristics of the selected viewpoints, but it is not a description of the process used to assure that the selected viewpoints would represent the full range of conditions within the study area where the NECEC will potentially be visible. Was there a conscious attempt to represent all possible combinations of viewing distance zones, viewpoint types, and surrounding land use, or is Attachment Q just a description of the photosimulations that were prepared?”

RESPONSE

TJD&A: Photosimulations are provided to illustrate to the general public and the permitting agencies how the project will appear. Since they are key to understanding potential visual impacts, it is important that the photographs selected for simulations be representative of the Project as a whole and that they give the reviewers an accurate picture of Project effects. The NECEC extends for 145 miles through very diverse landscapes that include commercial forests, agricultural lands, rural villages, and urban communities.

During the course of the fieldwork for NECEC, TJD&A visited hundreds of sites throughout the study area and collected thousands of photographs to illustrate existing conditions. The fieldwork concentrated on the scenic resources that were identified during the office research phase of the visual analysis, i.e., those public natural resources or public lands visited by the general public, in part for the use, observation, enjoyment, and appreciation of natural or cultural visual qualities generally within three miles of the transmissions corridor. Since it would be unreasonable to use every photograph, or to portray the potential effect of the Project on every scenic resource, TJD&A used the following filtering process to select a representative sampling to use as the basis for photosimulations.

- **Segments.** The number of photosimulations should be roughly proportional to the length of each of the five segments that were identified. Segment 1 (new 53.5 mile HVDC line)

has 16 simulations (including 4 at the Kennebec Gorge); Segment 2 (22 miles of co-located HVDC line) has 11 simulations (including 3 at the Appalachian Trail); Segment 3 (70 miles of co-located HVDC line) has 6 simulations; Segment 4 (25.4 mile rebuild section) has 2 simulations; and Segment 5 (26.5 mile 345 kV section) has 5 simulations.

- **Scenic Resources.** Photosimulations should be provided at the most significant scenic resources identified by TJD&A and DEP throughout the study area. The simulations should include views from great ponds, rivers and streams, mountain peaks, scenic byways, and other scenic resources.
- **Landscape Diversity.** Simulations should include views of characteristic landscapes within each of the segments to illustrate the diversity of landscapes, vegetation types, water bodies, landforms, and settlement patterns found throughout the study area.
- **Viewing Distances.** The majority of the photosimulations (approximately 70-75%) should be within the foreground viewing distance (up to 0.5 miles from the observer), and approximately 20-25% should be in the mid-ground (between 0.5 and 3.0 miles). Background views (beyond 3 miles) should illustrate those places where the transmission corridor might be visible from significant viewpoints, based on field identification.
- **Elevations.** The simulations should include views from relatively level areas as well as elevated viewpoints, assuming that the latter category will be mostly in the mid-ground and background viewing distances.

TJD&A selected an initial collection of photographs from the fieldwork to represent the geographic diversity of the study area, with particular attention to those areas where post-construction views may be most noticeable. The filtering process outlined above was used to focus on the most significant candidate sites and photographs. In making the final selection, the process also considered whether the scenic resources were either: **points** (e.g., scenic overlooks, mountaintops, historic structures), **lines** (e.g., scenic byways, river segments, hiking trails), or **areas** (e.g., lakes, historic districts, state parks).

The results of this process is illustrated in the Summary of Photosimulations matrix (Attachment Q), which categorizes each photosimulation by distance zones (foreground, mid-ground, background), viewpoint type/scenic resource (rated water bodies, remote ponds, elevated viewpoints, recreation areas/parks/trails, scenic byway, and road crossings), and surrounding land use (commercial working forestland, non-forested land/agriculture, low density rural residential/camps along ponds, and village/sub-urban residential). As evidenced by the matrix, the viewpoints selected provide the reviewer with an understanding of the diversity of the landscape and the potential effect that the Project may have on representative and worst-case viewpoints.

5.2 Registering the Digital Model to the Photograph

“Constructing photosimulations using 3D CAD software is an improvement over using Google Earth, which is not intended for such precise technical work. However, it is more difficult to review, since AutoCAD does not make available a reader for 3ds Max files.”

RESPONSE

TJD&A: As part of this submission, TJD&A is providing 3D Studio Max files, Photoshop, AutoCAD, and GIS files for the 10 Leaf-Off Snow Cover Photosimulations. In preparing photosimulations, TJD&A exported the 3D Studio Max files and inserted them into Photoshop. Topography,

structures, and conductors are individual layers in the Photoshop files that are being provided; therefore, a 3D Studio Max Reader is unnecessary.

“It appears very likely that the transition stations will not be visible, but it is difficult to verify from the uncertain information provided.”

RESPONSE

TJD&A: Based upon our analysis of topography, land cover, site plans, limits of clearing, individual termination station and component elevations, we have determined that the West Forks and Moxie Gore Termination Stations will not be visible from the Kennebec River due to the dense tree cover on both sides of the river. This information was provided in the October 19, 2018 MDEP/LUPC Response submittal.

6. EVALUATION OF VISUAL IMPACTS

“The evaluation of the photosimulations used DEP’s Basic Visual Impact Assessment Form. This form was originally prepared by Smardon and Hunter (1983) based on research evaluating the contrast rating approach to VIA (Feimer et al. 1979). This research found that the reliability of five observers was only moderate in strength, and they recommended using larger panels of evaluators. The use of only two raters clearly does not approach the standard recommended by the research that established the contrast rating approach to VIA.”

RESPONSE

TJD&A: The source for DEP’s Basic Visual Impact Assessment Form was *Foundations for Visual Project Analysis*, which was edited by Richard Smardon, James Palmer, and John Felleman and published in 1986. The form is contained in Chapter 12: Visual Impact Assessment: Changes in Natural and Rural Environment (p. 219). In describing the VIA process, the document notes: “In the final Stage of the recommended VIA framework outlined in this chapter, the visual analyst completes his or her summary of what effects the proposed activity/land use will have on visual quality within the study area.” It is noteworthy that this book, which provides the underpinnings for visual impact assessment, describes the process using a single evaluator. Nor does the Maine DEP guidance document, which includes this form and is the regulatory basis for using it here, require or suggest, that it should be completed by more than one evaluator.

TJD&A has used the Basic Visual Impact Assessment Form extensively over the past two decades when preparing visual impact assessments for Maine based projects and other projects. The Form was developed as a tool to assist both applicants and reviewers in assessing potential impacts on existing scenic and aesthetic uses. The DEP, to our knowledge, has never required or requested that more than a single evaluator complete the Form.

“The mean contrast rating at the overhead crossing of the Kennebec River (Photosimulation 32) was 16.5 which is “moderate” (a rating of at least 18 is required for a visual impact to be “strong” and 27 to be “severe.”). This is the photosimulation used in the Kennebec River rafting intercept survey reviewed above. The results suggest that there is a statistically significant difference between the rafters’ ratings of the existing and proposed conditions. The effect size suggests that this difference is probably large enough to be considered “strong,” but does not reach the level of “severe.” There are insufficient alternative data to evaluate the contrast ratings at the other viewpoints.”

RESPONSE

TJD&A: The other viewpoints included in the Kennebec River rafting intercept survey are either not scenic resources (i.e., Harris Dam, parking lot) or do not have potential Project visibility (Upper Kennebec Gorge section with Class 4 rapids, or the take out area in West Forks). There is no reason to evaluate the contrast ratings at these locations.

“Finally, only 37 viewpoints are evaluated, some of these represent the same scenic resource. There is no documentation of any visual impact evaluation at other scenic resources. Attachment H_Summary of Scenic Resources characterizes over 50 scenic resources with potential visibility of the project, but does not state whether the visual impact is adverse or unreasonable. No procedure is described to evaluate the visual impact at viewpoints with potential visibility but for which photosimulations have not been prepared.”

RESPONSE

TJD&A: See Attachment F: Scenic Resource Chart which includes a summary of the procedure that TJD&A followed to determine potential visual impacts, including viewpoints with potential visibility for which photosimulations have not been prepared.

7. MITIGATION

“The Attachment G: Road Buffer Evaluation is another step toward a systematic consideration of using vegetative screening to mitigate the visual impacts of the NECEC at road crossings. However, there is no support for the point system index that is used to determine whether a road crossing would benefit from vegetative screening. An alternative interpretation of these ratings might be to require vegetative buffering at any public road where either of the following occurs:

- **The degree of visible change is moderate or higher (i.e., a rating of 3 or higher)**
- **More than minor existing screening vegetation is to be removed (i.e., a rating of 2 or higher).”**

RESPONSE

TJD&A: The Road Buffer Evaluation was developed for the Maine Power Reliability Project (MPRP) and was approved by the DEP as a mitigation measure to address change in vegetation patterns at road crossings. The Road Buffer Evaluation was designed as a tool to determine the need for buffering in certain situations. In some situations, removing roadside vegetation is considered beneficial if it opens up more distant views to mountains or waterbodies. As noted in Attachment G, and as we learned from our experience with MPRP, the final determination of whether to use vegetative screening considers a range of factors; the decision is not a simple If/Then type of analysis. In short, there is no formula for requiring vegetative buffering at all public road crossings; rather, a case-by-case analysis is conducted.

“Visual impacts of a project the size of NECEC are unavoidable, vegetative screening cannot eliminate all visual impacts. It is somewhat surprising that there is no discussion of compensatory mitigation for these visual impacts. In particular, this might include visual resource improvement within effected communities.”

RESPONSE

TJD&A: During the November 28, 2018 conference call with Jim Beyer and Jim Palmer, it became apparent that Dr. Palmer had not received or reviewed the NECEC Compensation Plan, a revised version of which was submitted in the October 19, 2018 filing and the latest revised version of which is being submitted on December 7, 2018 concurrent with this response. CMP developed this Compensation Plan to address the issue of mitigation for potential impacts to scenic and recreational resources (as well as other natural resources) that may be affected by the Project. The following material, from the October 19, 2018 Compensation Plan, Section 1.2.1.9, Compensation of Other Impacts, provides an overview of the most significant compensatory mitigation measures that CMP has taken or is proposing as part of the Project application. Please see CMP's December 7, 2018 Revised Compensation Plan for a complete description of its compensation and mitigation proposals.

In its December 12, 2017 Environmental Information Request, the MDEP requested that CMP provide a mitigation package to compensate for impacts to cold water fisheries and recreational uses of the outstanding river segments. The MDEP notes, "The Department envisions this mitigation package will be the responsibility of CMP to implement, not simply providing ILF monies." In its response, CMP committed to reach agreement on the terms of compensation for Project impacts with the MDEP and USACE, which will avoid, minimize or mitigate those impacts through design, location, construction practices, ILF contribution and/or compensatory mitigation parcels.

On April 3, 2018, CMP, MDEP, and USACE held a working session to discuss the NECEC Compensation Plan. MDEP (Jim Beyer), maintained that the compensation package must include a combination of compensation components: ILF, preservation, and/or enhancement, to account for all Project impacts (most notably, impact to recreational uses of outstanding river segment and indirect impact to coldwater fisheries). CMP proposes a number of methods to offset impact to these resources, including land preservation, a culvert replacement program, and incorporation of construction practices to protect coldwater fisheries habitat and enhancement, described within Sections 1.2.2.3 through 1.2.2.5. This plan, in combination with the ILF and the compensation parcels used to offset natural resource impacts, described in Sections 1.2.2.1 and 1.2.2.2, exceeds the minimum compensation amounts required and provides long term protection of protected natural resources in Maine.

1. Existing Recreational Uses of Outstanding River Segments

The Maine legislature protects certain rivers, "because of their unparalleled natural and recreational values, provide irreplaceable social and economic benefits to the people in their existing state." 12 M.R.S. § 403. The NECEC crosses the following five locations which are afforded special protection as outstanding river segments, as identified in 38 M.R.S. § 480-P and 12 M.R.S § 403:

- *Upper Kennebec River*
- *Kennebec River below Wyman Dam*
- *Carrabassett River*
- *Sandy River*
- *West Branch of the Sheepscot River*

The NRPA further governs proposed activities that cross any outstanding river segment as identified in section 480-P and provides that “the applicant shall demonstrate that no reasonable alternative exists which would have less adverse effect upon the natural and recreational features of the river segment.” 38 M.R.S. § 480-D(8). CMP provided an alternatives analyses demonstrating that “no reasonable alternative exists” for each river segment the transmission line crosses. See NRPA Application, Chapter 2 (submitted September 27, 2017); Responses to Data Requests Letter (submitted March 29, 2018); NECEC Overhead Crossing of the Kennebec River Letter (submitted July 26, 2018).

As demonstrated by CMP, “no reasonable alternative exists which would have less adverse effect upon the natural and recreational features of this river segment.” CMP has therefore taken measures to minimize the Project impact to these resources. In the locations where the HVDC line is to be co-located within existing rights-of-way, CMP has minimized additional clearing to an average width of 75 feet, and minimized additional natural resources impacts by proposing crossing locations within existing, developed transmission line corridors. CMP has proposed to cross under the upper Kennebec River using horizontal directional drilling (HDD) in order to preserve the aesthetic value of this river segment and to prevent visual impacts to recreational and other river users. Additionally, in response to MDIFW’s Environmental Review Comments (submitted July 13, 2018), CMP committed to retaining 100 foot riparian buffers at all outstanding river segments.

Impacts to outstanding river segments have been further minimized by crossing in locations where a CMP right-of-way already exists or through design modifications and/or increased riparian buffers. As discussed in detail in Section 1.2.2.3, as part of this compensation plan to offset impact to existing recreational uses of outstanding river segments, CMP is including land preservation of three tracts along the Dead River which collectively will add 1,054 acres to Maine’s conserved lands and provide protection in perpetuity of 8.1 miles of river frontage along the Dead River, an outstanding river segment. In addition to the wealth of recreational opportunities (which are not limited to hiking, fishing, whitewater rafting, canoeing, snowmobiling, wildlife viewing and hunting), these tracts include the protection of Grand Falls waterfall, the largest horseshoe waterfall in the State, in perpetuity. Impacts to outstanding river segments will not unreasonably impact existing recreational uses of these rivers.

In addition, MDEP allows compensation that may include the restoration, enhancement, creation, or preservation of an area or areas as mitigation, providing the land as functions or values similar to the area being disturbed. CMP thus selected an additional three tracts of land totaling approximately 1,022 acres – the Flagstaff Lake Tract, the Little Jimmie Pond-Harwood Tract, and the Pooler Pond Tract – for preservation as mitigation. The primary function of the three tracts of land includes Educational & Scenic Values. For each property, CMP proposes to convey fee ownership to either a non-profit land trust/non-governmental organization or a state resource agency, and the transfer document between the parties will contain deed covenants and restrictions to preserve these properties and their ecological values in perpetuity.

Finally, CMP analyzed site-specific measures to reduce potential visual impacts on scenic resources. A good example is the treatment of the transmission corridor in the vicinity of Rock Pond. The initial photosimulation indicated that the clearing required for the proposed transmission corridor would cause significant contrast in color, form, line, and texture within a

small part of the view looking north from the Pond. After developing and evaluating several alternatives, CMP determined that it would propose tapering of the vegetation along the edge of clearing within the transmission corridor, maintaining trees and shrubs at heights ranging from 15 to 35 feet. Specifically, trees would be maintained up to 35 feet in height at the outer edge of the corridor, tapering down to vegetation maintained at 10 to 15 feet directly under the conductors. The overall effect is a softening of the cut profile as viewed from the lake and the retention of vegetation of similar color and texture as the surrounding landscape. See the revised Rock Pond Photosimulation 3.

8. CONCLUSIONS

“It is recognized that the area potentially impacted by the NECEC is very large. However, that does not seem to be a reasonable cause to do less of an assessment than for a smaller project; rather it seems to justify a more thorough assessment. The expectation is that:

1. All scenic resources, as described in Chapter 315.10, be identified.”

RESPONSE

See responses to 4. Scenic Resources, above.

“2. An accurate approach be used to determining potential visibility at all scenic resources and that the determination of potential visibility be fully documented.”

RESPONSE

See responses to 3.2 Accuracy of the Landcover Viewshed Map, 3.4 Field Verification of Visibility, and 3.5 Visibility Conclusions above.

“3. A clear process be used to select representative viewpoints for photosimulations and that the procedure used to evaluate visual impacts at these viewpoints be fully documented.”

RESPONSE

See response to 5.1 Process for Selecting Photosimulation Viewpoints, above.

“4. The visual impact to all scenic resources with potential visibility be evaluated, whether they are represented by a photosimulation or not, and that a clear evaluation procedure be used and the findings documented.”

RESPONSE

See responses to 4. Scenic Resources, above, which describes the evaluation of NRHP Eligible Properties, Cemeteries, Rivers and Streams, Lakes and Ponds, Public Roads, and Public Lands. See attached Attachment F: Scenic Resource Chart, which documents and evaluates all scenic resources with potential visibility within the 3-mile study area.

“5. All measures proposed to mitigate potential visual impacts be clearly described. It may be useful to also describe mitigation measures considered but not used, and why they were rejected.”

RESPONSE

See responses to 7. Mitigation, above.